UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,222	03/26/2004	Jen-Lin Chao	252011-2070	1942

47390 7590 08/19/2009

THOMAS, KAYDEN, HORSTEMEYER & RISLEY LLP
600 GALLERIA PARKWAY, 15TH FLOOR
ATLANTA, GA 30339

EXAMINER	
DICKERSON, TIFFANY B	
ART UNIT	PAPER NUMBER
3623	
MAIL DATE	DELIVERY MODE
08/19/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/811,222	CHAO ET AL.	
	Examiner	Art Unit	
	TIPHANY B. DICKERSON	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2009*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

1. This is a Final Action in response to the application filed on April 11, 2009. Claims 1-6 have been canceled and not claims were added. Claims 7-18 are currently pending before the Office.

2. In the previous Action, claim 11 was inadvertently referenced in the headings of both the § 102 and § 103 rejections although it was only discussed under § 103. Examiner would like to clarify on the record that claim 11 was rejected under § 103 as unpatentable over Wang in view of Çatay.

Response to Amendment

3. Applicant's amendment of claims 7-12 are not sufficient to overcome the previous § 101 rejection. A detailed explanation is provided in the Claim Rejections section below.

4. Applicant's cancellation of claims 1-6 is acknowledged and renders the previous § 112 rejection as moot. Therefore, the 35 USC § 112 rejection is hereby withdrawn.

Response to Arguments

5. Applicant's arguments with regards to claims 7 and 13 have been fully considered but they are not persuasive.

6. Applicant argues that Wang fails to disclose generating a dummy order. Examiner disagrees. Though Wang does not call the orders dummy order, but the reference does disclose temporary or tentative orders. For example, Wang [0035], discloses wherein the generated

dummy order is the initial transformed order or temporary order, i.e., temporary in the sense that it might be decreased depending on the machine-time based plan.

7. Applicant further asserts that Wang fails to disclose the "reserving" limitation. Wang, [41], discloses "the allocation planning module may provide an *inventive mechanism* to solve the demand-supply mismatching problem in the IC foundries, so as to match the customer demand with the capacity supplied by the manufacturer to obtain a highest demand fulfillment rate and a highest supply utilization rate." Here, Wang states that the allocation module contains an optimization engine which solves the complex discussed in [7-8] of the Background of the Invention. Paragraph 8 suggests that since manufacturing process of an IC product may involve several tools and varying degrees of production technologies, more sophisticated methods than wafer quantify are needed to assess capacity. Paragraph 7 notes the importance of managing equipment utilization rates. One of ordinary skill in the art would easily infer that that the mechanisms referenced in [41] were to solve the problems of [7-8].

Claim Rejections - 35 USC § 101

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 7-12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed process fails to either state a tie to a particular machine or transform a physical article.

The claimed process recites an intended use within an "electronic device" in the preamble. A preamble is generally not accorded any patentable weight where it merely recites

the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. *See In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Such a reference in the preamble would be regarded as a *mere nominal tie*, which would not convert an otherwise ineligible claim into an eligible one.

In addition, Examiner notes that references to various "subsystems" of the electronic device are construed as blocks of computer code which do not satisfy the machine or transformation test.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 7-12 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 7 includes the steps of "notifying a second subsystem" and "notifying a third subsystem" however the step lacks support in specification. For examination purposes, "notifying" is interpreted as the passing of a value of a variable (or the variable itself) to another computer function or module of code.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 7-12 rejected under 35 U.S.C. 103(a) as being obvious over Wang in view of Examiner's Official Notice.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Concerning claims 7 and 13, *Wang* discloses a system and method for balancing production capacity between different production technologies for use in an electronic device having a plurality of subsystems, comprising the steps of :

receiving a first order by a first subsystem (Wang, [42], i.e., receives order from order management subsystem) ;

generating a dummy order corresponding to the first order by the first subsystem (Wang, [0035], for example wherein the generated dummy order is the initial transformed order or temporary order, i.e., temporary in the sense that it might be decreased depending on the machine-time based plan);

notifying a second subsystem of the first order and the dummy order by the first subsystem;

Wang fails to explicitly teach the amended claimed step, however, Examiner takes Official Notice that the method of "notifying a second subsystem" by passing a value of a variable to another computer function or module is old and well known. Furthermore, Wang [41 and 45] implicitly teaches the step as illustrated in Fig. 1, where the order management module (122) receives the order, and the capacity management module (123) arranges capacity to meet customer demand).

It would have been obvious to one of ordinary skill in the art at the time of the invention to pass a value of a variable as officially noted by the Examiner in the system executing the method of Wang. It is within the capabilities of one of ordinary skill in the art to do so with the predictable results.

reserving a first capacity of a first production technology for the first order and a second capacity of a second production technology for the dummy order (Wang, [41], wherein "the allocation planning module may provide an *inventive mechanism* [i.e., optimization/searching and solving engine] to solve the demand-supply mismatching problem in the IC foundries, so as to match the customer demand with the capacity supplied by the manufacturer to obtain a highest demand fulfillment rate and a highest supply utilization rate.")

when a second order requesting the first production technology is received by the first subsystem, notifying a third subsystem of the second order by the first subsystem (See Examiner's statement of Official Notice above; See Also Wang, wherein a second order is received by the order management system, which *notifies* the third subsystem which may be another instance or the capacity management module [36], or alternatively the swap mechanism described at [37];);

canceling the first order and directing the dummy order to substitute the first order by the third subsystem (Wang, [37], wherein the swap mechanism is used to exchange the reservation capacity);

triggering the second subsystem to release the first capacity originally reserved for the first order by the third subsystem (Wang, [37], i.e. exchange).

Concerning claims 8 and 14, Wang discloses further wherein the second order is received before a cut off date for a capacity management cycle (Wang, [0035 and 0045], wherein [0035] receives a purchase order for the product.

Concerning claims 9 and 15, Wang further discloses wherein the capacity management module further cancels the dummy order and releases the second capacity if the second order is not received before the cut off date for the capacity management cycle [0035], (i.e., rejects an order sent from other customers before the cutoff date).

Concerning claims 10 and 16, Wang further discloses the method of claim 7 further comprising triggering a fourth subsystem to manufacture products of the first order using the second capacity, and manufacture products of the second order using the first capacity of the third subsystem (Wang, [51], wherein the fourth subsystem is the production line, and [0036-0038], i.e., utilizing a swap mechanism).

11. **Claims 11, 12, 17, and 18** are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 10/640,776 (i.e., Wang) which has a common assignors with the instant application in view of Examiner's Official Notice and further in view of Çatay, "Tool Capacity Planning in Semiconductor Manufacturing," August 2003, Computers & Operations Research, Vol. 30, No. 9, pp. 1349-1366 (hereinafter "Çatay").

12. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application.

This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the

inventor of this application and is thus not the invention "by another," or by a showing of a date of invention for the instant application prior to the effective U.S. filing date of the copending application under 37 CFR 1.131. This rejection might also be overcome by showing that the copending application is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103**(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).**

Concerning claims 11 and 17, Wang in view of Examiner's Official Notice discloses the system of claims 7 and 13 as disclosed therein. Wang does not explicitly teach the method of including an accounting unit to calculate a product discount. Çatay teaches a semiconductor manufacturing capacity planning method utilizing discounting to bias operation order (Çatay, Table 1, p. 1353, i.e. C_{tij}, discounted operating cost of each tool of type i to process operation j in period t).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize discounting as taught in Çatay in the system executing the method of Wang. Both methods aim to solve the same problems. As in the subject application, Çatay's method seeks to offer a solution to the problem of planning capacities when both new and old semiconductor products are simultaneously fabricated. Thus, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

Concerning claims 12 and 18 Wang in view of Examiner's Official Notice and further in view of Çatay discloses the method of claims 7 and 13 wherein the first production technology is more advanced than the second production technology (Çatay, p. 1351, i.e., newer and older tools, wherein 1) newer more efficient tools are "normally capable of processing advanced

products, as well as older products, and 2) older tools can usually only process older products and could require longer processing times."

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIPHANY B. DICKERSON whose telephone number is (571)270-7048. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571)272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TIPHANY B. DICKERSON
Examiner
Art Unit 3623

/Beth V. Boswell/
Supervisory Patent Examiner, Art Unit 3623